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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—6TH YEAR. SYDNEY: SATURDAY, MAY 31, 1919. No. 22

NOTES ON AURICULAR FLUTTER AND OTHER CARDIAC CASES.[1]

By **M. D. Silberberg, M.D. (Melb.),**
Melbourne.

(Continued from page 422.)

The Hypertrophies and Conduction System Lesions.

Another interesting thing is that the electro-cardiogram gives evidence of muscle mass balance, *i.e.*, whether the preponderance is right or left. When both sides are enlarged proportionately the evidence is less definite. Displacement, as by pleural effusions, may also give similar curves.

tion wave through the ventricle muscle mass. This electro-cardiographic evidence is of most value when, as in obese people, it is difficult to map out the size of the heart by ordinary clinical methods. Inversion of the peak *T* in Lead II. is not infrequently associated with poor prognosis. Compare these two with a normal curve (Figure XII.).

Inversion of *T* in Lead III. is of no known significance.

It will be remembered that the path of the excitation wave through the conduction system determines the form of curve. If the conduction system is interfered with in the ventricle, the curve is characteristic.

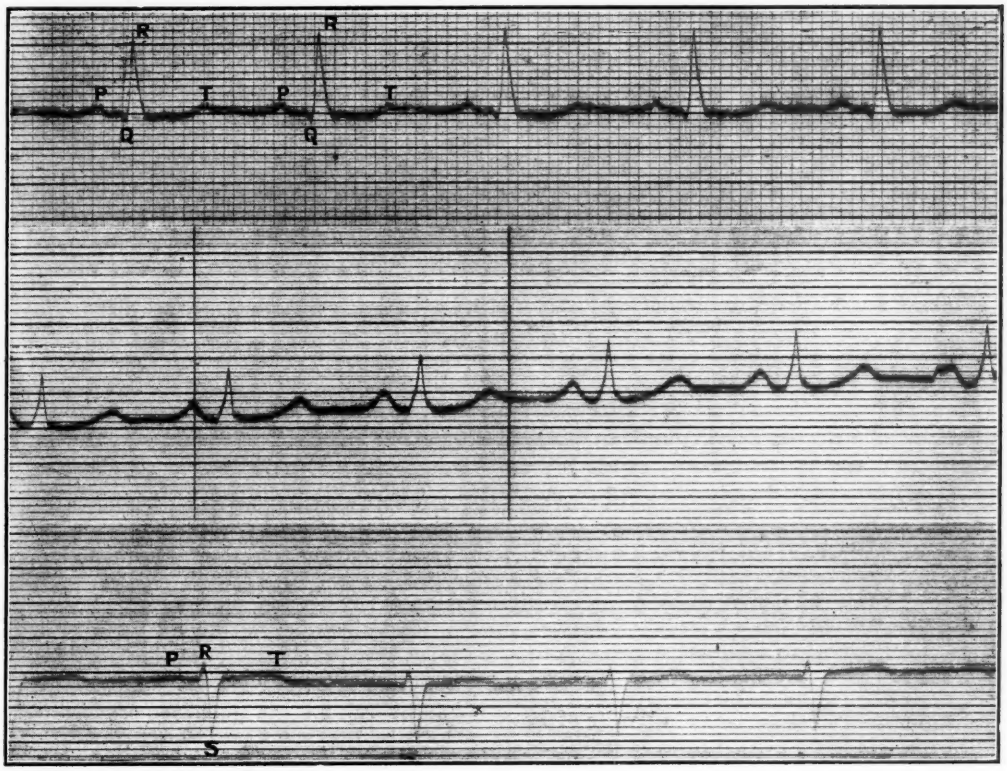

FIGURE XI.

M., *act.* 48, Arterio-sclerosis; high blood pressure, 200 mm. + and left hypertrophy; note the tall ventricle peak R is upright and tall in Lead I. and reversed in Lead III. (*cf.* Figures IX., XII.).

Let us take a pure right hypertrophy (Figure IX.), as in congenital pulmonary stenosis or pure mitral stenosis. Taking the three leads it will be seen that the tall ventricle peak is downwards in Lead I. and upright in Lead III.. Take a left hypertrophy, as in Figures X. and XI., due to high blood pressure and arterio-sclerosis. In Lead I. the tall ventricle peak is upright, in Lead III. it is inverted (*i.e.*, the reverse to right hypertrophy). These results are fairly consistent and depend on the altered path of the excita-

Experimentally the right or left limb of the bundle below the *A—V* node has been destroyed and the consequent electric complexes recorded. Similar lesions have been demonstrated post-mortem and the curves are similar to those in the experimental animal. Clinically it is evidence of localized myocardial degeneration and usually part of more widespread degeneration. The prognosis is usually grave. Stimulus in such cases reaches one ventricle ahead of the other and the heart sounds may be of the triple type, as in

canter or gallop rhythm. This is not to say that all triple rhythms are due to this lesion, or that they all show triple rhythm. When the left branch is affected the stimulus reaches the right ventricle first and the picture is as if the right ventricle were directly stimulated, as in right ventricular premature contractions.

Conversely, if the right limb be destroyed, the picture is as if the left ventricle were stimulated, after the manner of left ventricular premature contraction. The heart rhythm is normal, but the cardiograms reveal the lesion. The curve consists of a rhythmical series of atypical complexes. Lewis calls these aberrant beats. The path of conduction is unusual and

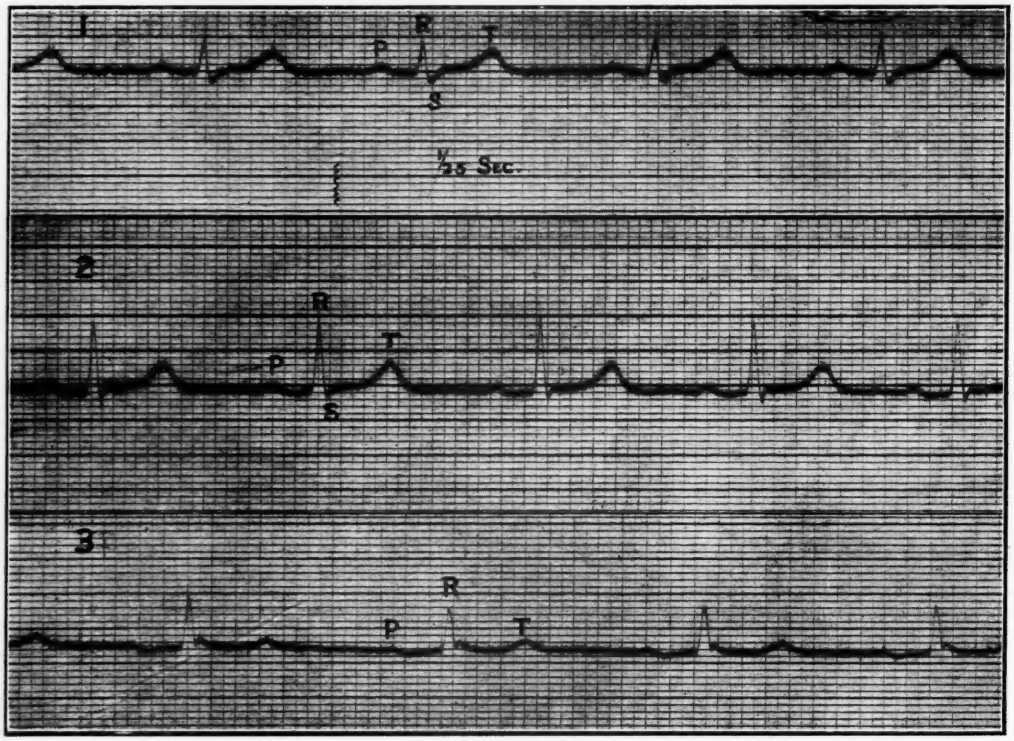

FIGURE XII.

Normal electro-cardiogram. P = auricular; R, S, T = ventricular; Q is absent.

the curve is unusual. Just as the main bundle of His may be disturbed in heart block, so the branches may also be disturbed.

The ventricular complexes are much wider than normal (one-tenth of a second or more). When the right branch is involved *R'* in Lead I. is unright, tall, wide and notched. In Lead III. it is inverted. In lesion of the left branch we get the reverse picture. In Lead I. *R'* (*S'*) is downwards, wide and notched. In Lead III. *R'* is tall, broad and notched. In both cases the deflections are in opposite direction in Leads I. and III.. (*T* is usually prominent and in opposite directions in I. and III..) (See Figures XIII., XIV. and XV..) These curves are a refinement in exact diagnosis, but are clinically important as reliable evidence of serious myocardial degeneration of grave import. Of two of the writer's patients, one died six months, one one month (Figure XIII.) after taking the record. Two are still in very fair health after four years' observation (Cases IV. and XI., Figures VA, VB and VC). In one the results are not known. This sign ranks in importance with the discovery of *pulsus alternans*, or albuminuric retinitis, *i.e.*, expected duration of life of about two years. Of course, there are many exceptions to these generalizations. In these cases enlargement of the heart is usual and other associated clinical signs are present, which would enable the medical man to regard his case as a "bad life."

CASE IX.—Mr. F.L., *æt.* 27, assayer, had been told his heart was affected six years previously and was then rejected for life insurance. He had no symptoms then. He was able to take exercise, *e.g.*, he had cycled twenty-five miles on several occasions. In the last fifteen months he has been failing. He dates his symptoms from this time, when, on lifting a heavy weight, he "felt something snap in his chest" and felt a dragging pain over the heart, lasting three days. He had some pain three weeks later, more severe. This lasted a week and he had to stop work. About this time he had attacks of breathlessness. The same type of pain recurred ten months later and he ceased working. He gets a sensation as if his heart was being blown up with a bicycle pump; it feels as if it would burst and then he becomes unconscious.

He now has dyspnœa on slight exertion. There is no swelling of the feet. He is conscious of a grating sensation over the aortic area and heavy beating of the heart.

Previous History.—He has had no rheumatism; he denies a venereal infection. The Wassermann reaction is negative. He is a moderate smoker and a teetotaller.

Examination.—He is well nourished. His arteries are not thickened. His blood pressure is 120. His heart is very large. The cardiac dulness extends 3.8 cm. to the right of the sternum; the apex beat is 13.75 cm. from mid-line in the sixth space. There is a very marked, loud, rough bruit over the aortic area transmitted all over the chest. A systolic thrill is palpable over the same area. X-ray examination shows some dilatation of the first part of the aorta.

The cardiograph gave a characteristic curve of interference in the conduction system in the ventricle.

He died about six months later.

Case X.—Mr. McI., *æt.* 32, engine-driver (similar to Case IX.). He complained of shortness of breath and palpitation. He knew that he had heart trouble since the age of twelve. He could not pass for the railway service at fifteen, but at eighteen was accepted as an engine-driver. He was at this time doing bicycle racing.

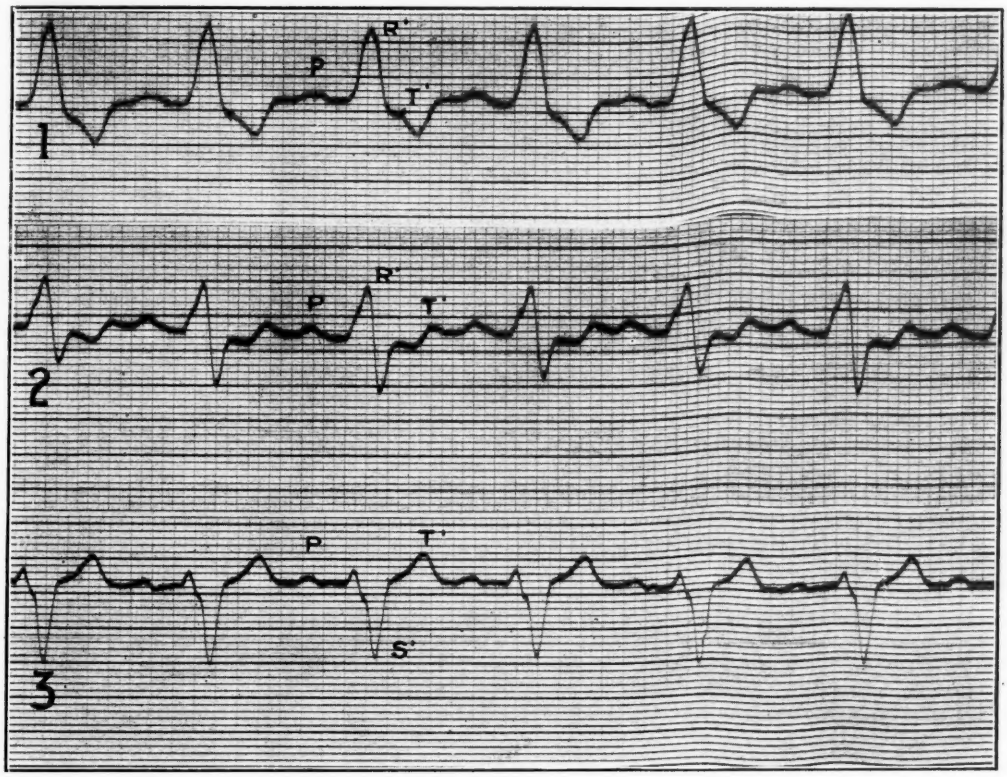

Figure XIII.
Case X.—McI., *act.* 32. Aortic Stenosis, Mitral Regurgitation. Very large heart. Shows curve characteristic of damage to conduction system in the ventricle. (L limb.)

Two and a half years ago he was found to be unfit for the railway service. He has been somewhat short of breath for five years, but worked hard, latterly as a farmer. The dyspnœa has much increased in the last four months. There is no swelling of the feet, etc..

Previous History.—There is no history of rheumatism, chorea, etc., obtainable; the patient denies venereal disease.

Present Condition.—He is dyspnœic. There is marked venous pulsation in the neck. The pulse is rapid, regular, 100 per minute; the blood pressure is 104 mm.. There is no Corrigan pulse. His heart is greatly enlarged. The right cardiac dulness extends 6.25 cm. from the sternal margin. The apex beat is diffuse in the sixth and seventh spaces, 16.8 cm. from the mid line. There is a rough systolic thrill over the aortic area, corresponding to a very loud, harsh, aortic systolic bruit. The second aortic sound is scarcely heard. At the apex systolic and diastolic bruits are heard over a wide area and are conducted some distance into the axilla. The second pulmonary sound is very loud. A tricuspid systolic bruit is also present. The aortic dulness is increased. Moist sounds are heard in all parts of both lungs. The liver is enlarged; its edge is felt 10 cm. below the costal margin. The urine is clear.

The polygraph shows nothing remarkable, but the electro-cardiogram (Figure XIII.) is characteristic of the bundle branch lesion (right limb).

The patient did not respond to treatment and died of heart failure one week later. No post-mortem examination was obtainable. A Wassermann test was not carried out.

Case XI.—Mrs. H., *æt.* 48, was first seen on July 19, 1915. Ten months previously she had an attack of giddiness and vomiting and tinnitus. There was no dyspnœa. She was easily fatigued. The patient was married and had had seven children, of whom two died of diphtheria and one of marasmus. She had had nine miscarriages. No Wassermann test was carried out.

Present Condition.—She is thin and looks older than her age. His arteries are slightly thickened. The blood pressure is 180, diastolic 116, the pulse pressure is 64 (auscultatory). The heart is large. A diffuse heaving impulse, with palpable thrill, is present at the apex. It is partly presystolic and partly systolic. The apex beat is 3.75 cm. outside the nipple line, nearly in the anterior axillary line. The first sound is loud, rough and booming. The second aortic sound is accentuated. The pupils are equal and react to light, etc.. Her knee-jerks are active. The lungs are clear. The pulse-rate is regular (75 per minute).

The electro-cardiogram shows a bundle branch lesion, similar to the cases IX. and X..

March 24, 1919.—The patient is very much better. She has since had a radical operation for a breast carcinoma and stood it well. There is no dyspnœa, some palpitation and some tinnitus. The blood pressure is 190 mm.. The heart sounds are the same as before.

The cardiograph also has not varied.

This case, as does Case IV., belies the serious prognosis associated with the aberrant type or bundle branch lesion.

Figure XIV. shows the cardiographic evidence of the lesion in the right branch of the conduction system in the ventricle.

If time permitted I would like to have added remarks on premature contractions or extra systoles causing intermittent pulse and various symptoms and also on heart block. Just one observation on the latter and I conclude.

I have seen one case of complete heart block of syphilitic origin where the pulse-rate was 30 per minute. Every now and again there would be a short paroxysm of tachycardia, in which the ventricle speed rose to 200 per minute. There was an almost complete absence of peripheral pulsation and the patient became unconscious. He described a number of similar attacks. Here is then another cause of faints in Stokes-Adams' disease.

Another patient of Mackenzie's has been the subject of several papers. I obtained polygraph records at various times and just before his death. These later exhibited short paroxysms of ventricular tachycardia at 60 to 80 per minute; the ordinary rate was 15 to 20. The paroxysm lasted for a few minutes or less. As these ceased it took the ventricle some time, may be twenty seconds or more, before it took up its own rhythm, which in this case was about fifteen per minute. In this interval the patient became unconscious and had fits if the asystole was long enough. This illustrates another method in which Stokes-Adams' fits may occur.

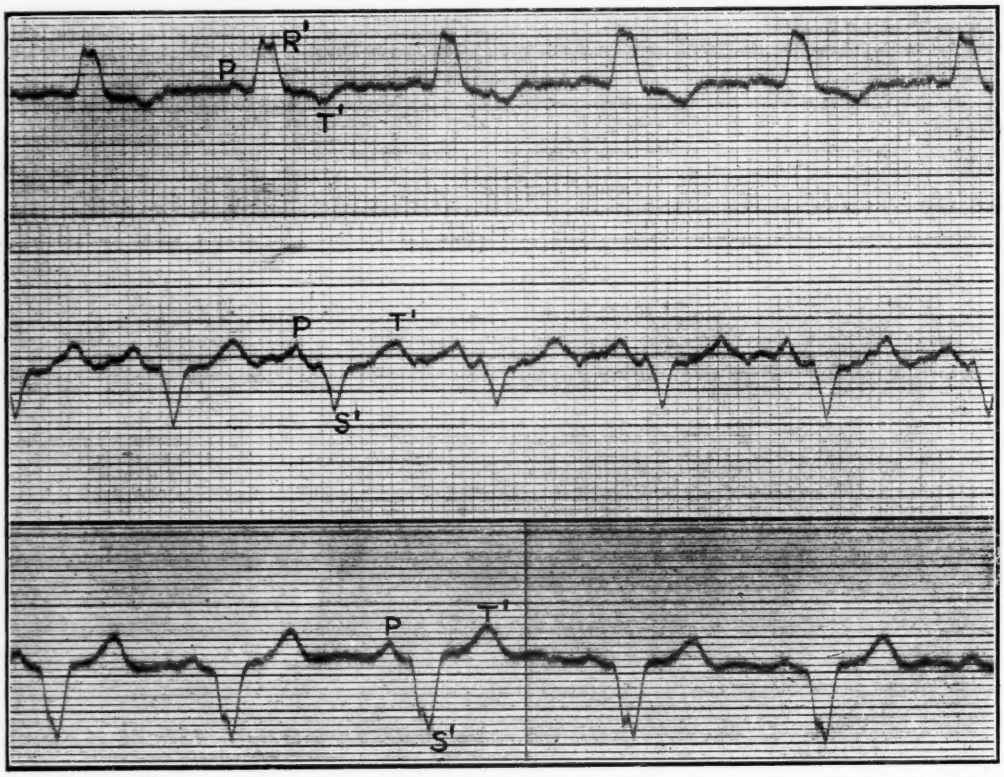

FIGURE XIV.

Case XI.—H., *act.* 48, Bundle Branch Lesion, same type as Figure XIII.

Summary.

To summarize this paper, auricular flutter is not uncommon in old people.

The persistent, rapid pulse-rate, with periods of irregularity and occasionally doubling of the speed from exertion or excitement, should suggest a possible flutter.

The electro-cardiogram is the surest means of diagnosis.

Treatment by digitalis is satisfactory.

The electro-cardiogram reveals characteristic curves in the hypertrophies.

It may have been mentioned it gives positive evidence of dextro-cardia, because the curve is completely reversed in Lead I..

In lesions of the branches of the conduction system it gives clear evidence of myocardial degeneration—an important sign with serious outlook.

Cases of auricular fibrillation are quoted to show various possibilities and the great value of digitalis therapy.

In the gross arrhythmias, when the pulse is relatively slow or can be slowed, the expectation of life is not far short of normal. Any of these arrhythmias may occur paroxysmally and be of short duration till the condition is fully established.

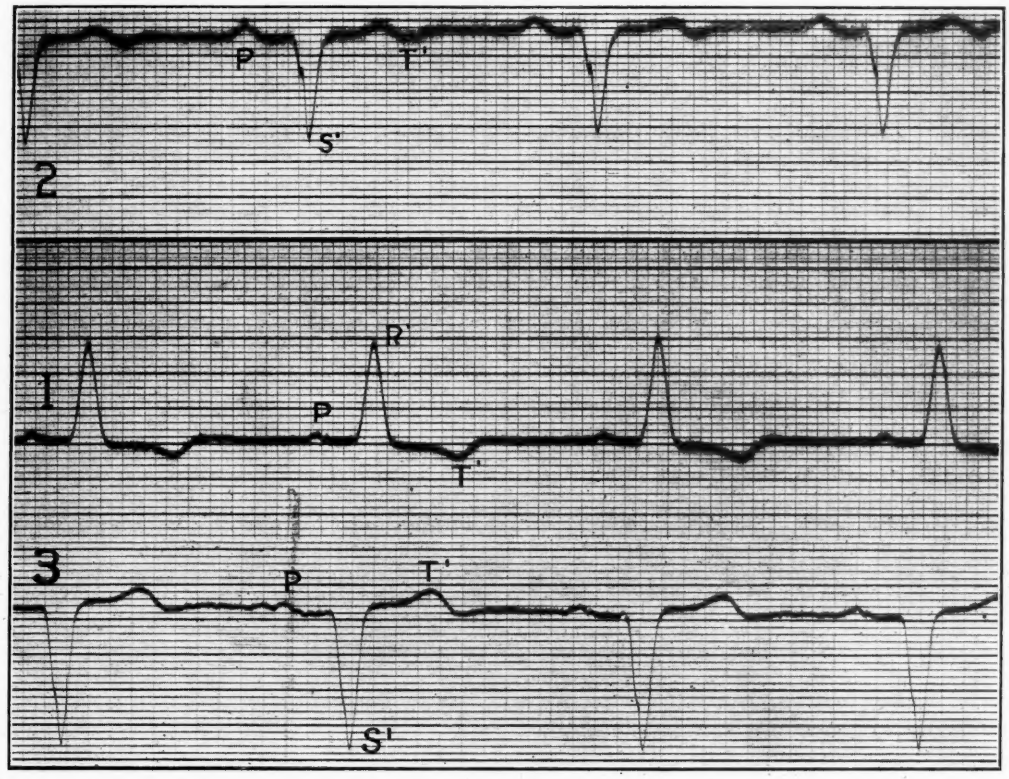

FIGURE XV.
Case IV.—C.S., Bundle Branch Lesion.

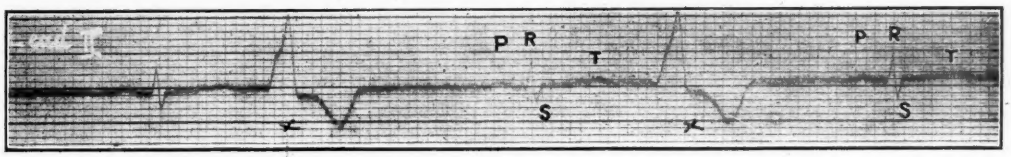

FIGURE XVI.
Two Premature Contractions (extra systoles) at × × from the right ventricle. From the left ventricle view this inverted.
(*Cf.* Figures XIII., XIV., XV., bundle branch lesions.)

Attacks of palpitation, with abrupt onset and offset, are due to one of the forms of tachycardia described. They are often so short that opportunity is lacking to see or record them. The history is characteristic and is usually sufficiently graphic to enable one to identify from the patient's remarks.

THE MODERN TREATMENT OF DISEASE AND DISORDERS OF THE HEART.

By **R. R. Stawell, M.D. (Melb.), D.P.H. (Lond.),**
Honorary Physician, Melbourne Hospital; Honorary Consulting Physician, Children's Hospital, Melbourne.

Preface.

This paper was written to be read at a meeting of the Victorian Branch of the British Medical Association; it was to have been regarded as an opening address for a discussion of the problems of diseases of the heart. As it happened at that meeting, the discussion was not opened until a very late hour in the evening, too late, as it seemed to me, to justify the reading of the full text of my paper. I, therefore, omitted many paragraphs, altered and curtailed many sentences, and addressed myself hurriedly to debatable points and to the most recent work concerning treatment of heart disorders. In my attempt at brevity, it seems I did not give anything like a true expression of my feelings concerning the broad and important problems inseparable from any consideration concerning heart disease. As my contribution to such short discussion as did take place, I am desirous that the full text of my address be published.

[1] Read at a Meeting of the Victorian Branch of the British Medical Association on April 2, 1919.

Introduction.

I have been invited to open a discussion on the

problems of diseases of the heart, and I have been requested to confine myself as far as possible to the consideration of recent advance in treatment of these conditions. Even in a short address on the subject of treatment, it is not possible to avoid references to the subject of diagnosis, seeing that it is specially in the realm of diagnosis that a very great advance in knowledge has been made in recent years.

For those of us who are somewhat older than the youngest, it is important to realize that the terms auricular fibrillation, auricular flutter, extra systole or premature contraction, sinus arrhythmia are not just new names for old conditions; they are more than new names, for they express new conceptions and indicate an advance in knowledge, which has brought some clearness and definiteness into the old bewildering mass of cardiac irregularities and disturbances of pulse rhythm. For many years, both as a post-graduate student and a teacher, I felt myself always bewildered concerning the labyrinthine problems of cardiac arrhythmia. In my search after knowledge, I felt like Omar Khayyam:—

> Myself when young did eagerly frequent
> Doctor and saint, and heard great argument
> About it and about; but evermore
> Came out by the same door as in I went—

until I read James Mackenzie's writings.

The most bewildering of the old problems were solved by this great observer and thinker. Recognition of the immediate practical value of his work on the matter of diagnosis of heart diseases was one of the most uplifting experiences of my life of clinical work. Nearly nine years ago I published my appreciation of all this work in my presidential address, "A Review of Recent Clinical Methods in the Investigation of Cardio-Vascular Disorders." So far, then, as important classification goes, so far as a completer understanding goes, there has been a real and a great advance in the knowledge of heart disease; but has that advance in knowledge been great enough to have brought with it a real improvement, a real advance in treatment? If we are content to accept the attitude of often doing nothing, instead of doing something useless or mildly harmful, as an "advance in treatment," then we have advanced a little, all along the line, as regards the treatment of the great bulk of cases of grave heart disease during these last twelve years. There is, of course, as must be recognized by all, a definite advance in knowledge of how and when to use digitalis effectually; but digitalis, as Mackenzie pointed out, has a special sphere of usefulness, almost limited to one type of heart disease, auricular fibrillation of mitral stenosis. As regards all the other types of grave and common heart disease, the treatment is much the same as it was before Mackenzie and his followers published their remarkable work.

Septic Foci as a Cause of Cardiac Disease.

But as regards the milder or early forms of disorders and disease of the heart, advance of knowledge has brought with it some real advance in treatment, at least in preventive treatment. The recognition that even obscure smouldering sepsis, that recurring rheumatic infection, that persisting toxæmia, would and did lead to, perhaps, only slight general ill-health, which, however, specially showed itself in marked cardiac weakness and cardio-vascular disturbance; the recognition of this fact has brought about a helpful attitude of mind as regards treatment.

Instead of being content to recognize that a heart is diseased we now try to recognize why it is diseased; instead of vaguely trying to stimulate heart muscle by drugs, we try to remove infective foci of sepsis and prevent the constant and recurring spoiling of heart muscle. I am convinced that I have seen recurring rheumatic inflammation of heart muscle and valves subside and recur no more after the removal of septic tonsils. I have, of course, seen cases in which the same method of treatment was useless. Was it too late in the one case, or was the cause of apparently the same condition different? I do not know. I am convinced that I have seen attacks of severe angina pectoris subside and disappear after the draining of septic maxillary antra. I am convinced that I have seen cases of so-called soldiers' irritable heart, and in civilians too, steady and improve after the removal of a smoulderingly inflamed appendix and the clearing out of septic teeth. It has been, broadly speaking, an immense gain in knowledge, carrying with it a great gain in treatment, to recognize the clinical fact that what appear to be special disorders of the heart are only part of a general disorder of the body.

The Influence of Metabolism on the Heart.

The splendid work of investigation carried out at the Hampstead Military Hospital on cases of disordered action of the heart has led to the abandonment of direct treatment of the heart and to the institution of graduated exercises as the basis of treatment of these disorders. Lewis and his fellow-workers have indicated in a very convincing way that in the disordered action of the soldiers' irritable heart only very little can be shown to be wrong with the heart itself, but much can be shown to be wrong with the general bodily metabolism; for instance, that the breathlessness is due probably to the diminution of the so-called "buffer salts" and that, in consequence, the breathing becomes hyper-sensitive to the presence of carbon dioxide; that in these cases there is constant leucocytosis and that there is a diminished urea output and other obscure changes in the urine. This work at Hampstead has a widespread application to all forms of heart disease. What is true of functional toxic disorders of the heart is true, to some extent, of a heart organically diseased. A heart affected with an obvious valvulitis is not immune to the influence of a general toxic disorder, is indeed specially prone to suffer from such a condition, which in such a case is specially liable to arise. Much improvement may be obtained by giving such a case healthy exercise and much harm may be done by forbidding exercise.

So far, then, the advance in treatment for minor degrees of heart disease and heart disorder may be said to consist in efforts to remove sepsis, to diminish the intake of toxins, to improve nutrition and metabolism by healthy exercise. It may be very well said that there is nothing very striking in that advance in knowledge; but perhaps its "corollary" is striking, that rest is harmful, that digitalis is useless, and that no drug is of any value as a heart tonic for these conditions.

The Treatment of Grave Cardiac Lesions.

In passing on to the consideration of grave and progressive forms of heart disease, it is right to lay emphasis upon the condition of the myocardium, of the heart muscle and not the valves or the vessels, as the essential point to be considered in the treatment and prognosis of all cases of heart disease. This has always been recognized, but never more clearly or more definitely than in recent years. Following on this, there seems to me to be a decided tendency on the part of some observers—a view which I cannot share—to ignore the influence on the circulation and heart cavities produced by the mechanical defects of a chronic valvulitis or of an accumulation of blood in the left auricle, defects which the old physicians indicated under the term "back-telling," back-working, compensation and failure of compensation. I quite recognize that, while the nature of the cause of the irregularity in the "mitral pulse" was not known, unreasonable inferences were made as regards many of the facts observed and the influence of the purely mechanical (obstructive) defects was exaggerated. But the underlying basis of an accentuated pulmonary second sound (a valuable diagnostic sign) and the basis of the condition of brown induration of the lung in a non-fibrillating case of mitral stenosis seem to me only comprehensible on the view that there is an altered mechanical relationship between the left auricle and the right ventricle, a condition which ultimately helps to impair the nutrition of the muscle of both cavities. I quite recognize that, with present knowledge, it would be meaningless to describe the improvement that, for instance, takes place under treatment with digitalis in a case of auricular fibrillation as the restoration of compensation; once auricular fibrillation has recurred, even if dropsy disappears and breathlessness diminishes, there can be no question of the restoration of compensation.

But I am getting away from my subject and must restrict myself to the question of treatment. As regards the great group of cases exhibiting marked cardiac arrhythmia and as regards the great group of cardiac cases exhibiting grave cardiac symptoms, it is essential to recognize that there can be no basis for determining whether treatment should be one of masterly inactivity or active hard hitting, unless the diagnosis is accurate and clear. Accepting that statement, that all depends on accuracy of diagnosis, then for two types of arrhythmia, the so-called advance in treatment may be summarized as follows:—

(1) For cases of sinus arrhythmia, once the differential diagnosis is made, avoid anything that could be called direct treatment of the heart.

(2) For cases of premature contraction or extrasystole, also avoid anything that could be called direct treatment of the heart, but adopt any treatment that will improve general health and remove toxic degenerating influences on heart muscle. The nature of the ætiological factors producing this form of heart disturbance is so varied, so obscure that it is difficult in many cases to determine even the line of general treatment. It is very dicult to give a right prognosis. Much work remains to be done in the investigation of this great class of cardiac cases.

The Rôle of Digitalis.

For cases of auricular fibrillation occurring in cases of rheumatic mitral disease, improvement, if not actual advance, in treatment has unquestionably been brought about in recent years. Digitalis is extraordinarily valuable in these cases; but it will be answered that it has always been recognized to be of great value in just these cases. In what respect then has advance been made? Apart from the standard of dosage which has been raised, apart from the mode of administration which has been improved, in continuousness of treatment by digitalis lies the advance in treatment of these cases. Digitalis was, of course, in the past given more or less continuously in these cases as a matter of routine and practice. Now, as a matter of principle, it must, no matter what improvement occurs, never be discontinued as long as auricular fibrillation lasts and auricular fibrillation will last as long as the patient lasts.

Why does this condition at a certain stage respond so well to digitalis? Because the digitalis group of drugs increases the action of the vagus and the vagus controls or inhibits conduction of myocardial impulses passing from auricle to ventricle, so that a certain degree of heart block is brought about and the left ventricle gains some rest from irritating auricular influences. That is why the digitalis group of drugs happens to be of peculiar value in this type of case. But does digitalis do anything more? Can it be said to be a heart tonic? I think it is, though I recognize that I cannot prove it. It is interesting to recall that rheumatic mitral disease with heart failure (œdema, breathlessness, etc.) in children under fourteen years of age is not associated with auricular fibrillation; the heart fails as a whole, not the auricle primarily or chiefly, yet excellent results appear to be obtained by the use of digitalis in the type of heart disease in children. More observations with modern methods require to be done on this point. From general clinical observation and from pharmacological experiments, digitalis may be said to diminish the degree of relaxation, the slackness in the heart muscle, when the muscle is physiologically relaxed; it may be said, therefore, to maintain a degree of tone or tenseness, preparatory to contraction, so that when the actual stimulus to contraction comes along, there is no "slack" to be taken up. Digitalis may reasonably be inferred to improve tone of heart muscle; does it improve its contractility? I do not know.

Before leaving the subject, I need hardly point out that the present plan of treatment for cases of mitral disease, even with the fullest appreciation of recent improvements in methods of treatment, is extraordinarily anomalous and really unsatisfactory. We are told, as it were, to say to a patient with mitral stenosis, showing certain definite symptoms of cardiac disability, and in children, symptoms of actual cardiac failure: "We can do nothing of direct value for your failing heart until you get much worse; when the auricle further degenerates to a condition of extreme feebleness or fibrillation, then, and not till then, can we give you something of direct value as a heart tonic." This may be quite true, but it is not an attitude of treatment with which we can be content.

As regards paroxysmal tachycardia, as regards angina pectoris, as regards cardio-sclerosis, as regards cardio-sclerosis with arterio-sclerosis, I do not believe we have made, in the last two decades, any real advance in treatment.

In a general way, as regards the use of digitalis, though modern work has established one of the principles of its use, I do not think we have made any notable advance with it in actual treatment. A cynic might say we have at least diminished its misuse. Much has been done in the way of investigation, very much remains to be done, and no cynic can take away the hope that now illumines all this subject, no pessimist can lessen the stimulus that now exists for all clinical observers, ever since Sir James Mackenzie cleared the ground and showed the way to work so that further advance in knowledge and some advance in treatment may be made.

Reports of Cases.

DENTAL BROOCH IN THE THROAT.

By J. G. Edwards, M.B., M.S., and W. A. Edwards, M.B., M.S., *Sydney.*

A woman, aged 50, was sent to us for the localization of a foreign body in the throat.

During a dental manipulation, the surgeon allowed a brooch to slip from his fingers and the patient swallowed it. The instrument was 3.5 cm. long and was shaped like an ordinary hypodermic syringe needle (see Figure I.).

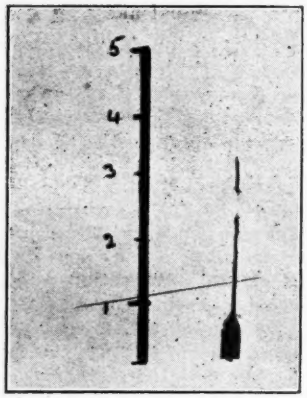

FIGURE I.

A skiagraphic examination showed it to be present in the pharynx well below the entrance of the larynx (see Figure II.). Dr. H. Seaward Marsh cocainized the throat and pharynx. and with a laryngoscopic mirror could see a portion of the brooch. The large end was in the *recessus piriformis* and the upper sharp end had perforated the pharyngeal wall to a depth of 0.5 cm..

The instrument was then grasped with long laryngeal forceps and by depressing the instrument, the upper sharp end was disengaged and the foreign body removed.

The patient made an uninterrupted recovery.

Reviews.

SURGERY.

The fact that the little book by Mr. J. Cunning and Mr. C. A. Joll on aid to surgery[1] has reached a fourth edition shows that it has successfully met the demands of the class of readers who find a use for books of this sort. It is a highly dried and compressed epitome of surgery, not at all suitable for anyone who really wants to learn surgery, but probably very well suited for the student who has already been through his work with the aid of a book containing more of the vital juice of the subject. Therefore, the book may help him to review, if not to learn. From an expectant examinee's point of view, it may be more important to be able to pass an examination in surgery than to possess a more real knowledge, but of a sort which may not avail to get him through. That is the reason for the crammer and for cram books. While our present methods of examination continue, the cram book must also continue. This is a very efficient one.

[1] Aids to Surgery, by Joseph Cunning, M.B., B.S., F.R.C.S., and Cecil A Joll, M.S., F.R.C.S.; Fourth Edition; 1919. London: Baillière, Tindall & Cox; Foolscap 8vo., pp. 420 Price, 4s 6d. net.

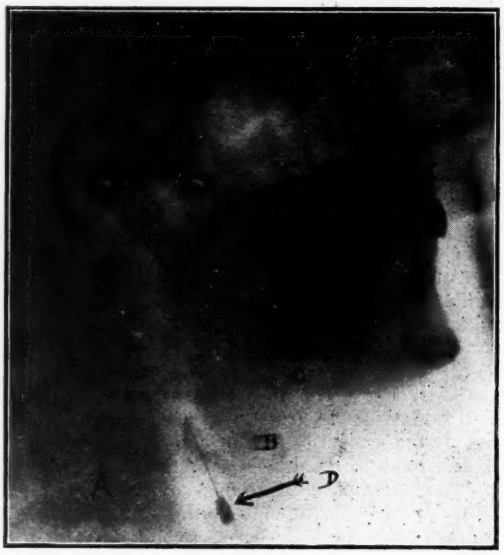

FIGURE II.
A Spine. B Hyoid Bone. C Mandible. D Foreign Body.

VENEREAL DISEASES REGULATIONS.

An additional regulation has been issued by the Governor of Tasmania in connexion with the Venereal Diseases Regulations, 1917-1918:—

(18) No pharmaceutical chemist, directly or indirectly, shall sell any of the undermentioned drugs, save only and except when prescribed by a duly qualified practitioner:—

(*a*) Any patent or proprietary medicine which is specifically recommended for the cure, alleviation or treatment of any venereal disease;
(*b*) Kharsivan or any similar synthetic organic arsenic compound;
(*c*) Argyrol or any similar synthetic organic silver compound;
(*d*) Grey oil or any similar mercurial emulsion specifically prepared for the cure, alleviation or treatment of venereal disease;
(*e*) *Hydrargyrum cum crêta* (or its admixtures), biniodide of mercury, tannate of mercury and cyanide of mercury in pill or tablet form;
(*f*) Sandal wood oil or its derivatives, copaiba or its derivatives, in the form of emulsions of capsules;
(*g*) Methylene blue in the form of pills, tablets or capsules;
(*h*) Any medicated bougie;
(*i*) Gonococcus vaccines and serums and gonorrhœal phylacogen.

Any person committing a breach of this regulation shall be liable to a penalty for each offence of not less than £5 nor exceeding £20.

We note that Dr. Ernest Arthur D'Ombrain has been appointed one of the Honorary Rangers of New South Wales, under the provisions of Section II. of the *Birds and Animals Protection Act, 1918.*

The Medical Journal of Australia.

SATURDAY, MAY 31, 1919.

The War and its Lessons.

Far away from the shores of sunny Australia there is a spacious building in a somewhat narrow and tortuous road leading to Lambeth Bridge. Opposite this building are mean by-ways separating it from the back of a great school and a great church, Westminster School and Westminster Abbey. To the west, again divided by narrow streets, scarcely worthy of the name, is a great military medical training school; and on the other bank of the River Thames not half a mile distant is a celebrated ecclesiastical edifice, Lambeth Palace, the magnificent residence of the Primate of England. All around nestle in the closest proximity the utmost squalor and signs of great prosperity. Ancient, tumble-down and miserable apologies for houses abound in the immediate neighbourhood, while but a few paces further on stand imposingly and in incomparable grandeur the stately Houses of Parliament facing the beautiful buildings of Saint Thomas's Hospital. Every stone in the complex carries with it the history of centuries—a history at once entrancingly fascinating and absorbingly important to the British Empire. Within the building to which we refer, a history of unequalled importance and practical value is being painfully recorded from a great mass of heterogeneous material, the diaries and individual records of soldiers. The Australian War Records Section, as we have pointed out in previous issues, has established itself in this situation and a number of apartments are set aside for its medical branch. It is here that the official Collator, Lieutenant-Colonel A. Graham Butler, D.S.O., and his Assistant Collator, Captain A. L. McLean, M.C., are working steadily and strenuously in their great endeavour to piece together the individual fragments of the wonderful story, the medical history of the war. Their task at present is to find each fragment, large and small, which is needed to complete the whole. The medical services had manifold duties to perform and these duties had to be accomplished in an ever-changing environment and under conditions which affected the performance greatly. There was the picking up of the wounded, the first-aid rendered, the evacuation from the front line to the field ambulances and to the casualty clearing stations, the discharge to the base and later to the numerous institutions in Great Britain. There were the various and varying illnesses and injuries, the poisonings and the mental disorganization; there was the task of providing a safe field and camp sanitation, an adequate water supply, a tolerable hygiene for our fighting men. Hospitals had to be equipped and special departments had to be organized and worked. Then there was the personal factor, the relationship between medical officer and combatant; the medical units had an important task to keep in close and sympathetic touch with the men and to render them individual aid. The venereal question formed part of the duty of the medical services. The list is much longer, but these few chapters may give some indications of what the Australian Army Medical Corps has achieved abroad. All of it must be recorded in a proper sequence and in measured proportions. A mere colourless reference to the number of men evacuated cannot convey a living picture of how this was effected. The day's work must be described as it appeared to the officers performing it, if the collators and the historian are to write an intelligent history, a history which will serve a useful purpose in any future war. The task includes, in addition, a contribution—nay, a thousand contributions—to pathological and clinical science. These things must be recorded accurately and in sufficient detail to carry with them a practical application of the lessons.

The Collators ask every medical officer who served in the war and every nurse to send them accounts of their experience. These accounts should be as full as memory permits, and they must be accurate, not phantastical. The details will be regarded as confidential. Photographs and other illustrations will be welcomed when they infuse life into the pen picture of the writers. No one need fear to contribute an account because of a want of skill in description. Plain words can convey a correct impression and it will devolve on the historian to translate the records, di-

vested of unnecessary or useless garnishing, into smooth sentences and weave them into the history. Those who served as regimental medical officers must have a wealth of information to give. They are particularly reminded that there are many gaps in the records at the office in Horseferry Road and that the world looks to them to help the Collators to fill them in. The history must be made worthy of the service and of the profession of medicine.

THE STUDY OF CARDIOLOGY.

We have repeatedly called attention in these columns to the disastrous prevalence of diseases of the cardio-vascular system and to the large number of deaths that are properly classified under this heading. In every return of vital statistics it is recorded that more deaths from diseases of the heart and of the arteries are registered than deaths from any other group of lesions. It is known that many of the affections included in this group are preventible, while there is small doubt that with increasing knowledge of the pathology and ætiology, preventive measures will be applicable to others as well. In the past pathologists have been satisfied to study the outside of the problems. The gross changes seen in the organs teach but little of the true nature of the defects. Morbid anatomy leads us but a short distance in the interpretation of any disease. When the observations of the pathologist are amplified by a close study of the physiology of the organs implicated, both in health and when affected by primary or secondary disease changes, the knowledge becomes of a much more valuable kind. The pathologist of to-day has a far wider outlook and has to take into his consideration the chemical and physical changes which occur when an infection or an inflammatory process or a disturbance of the musculo-nervous mechanism interferes with the normal functions. The task for the future must also embrace a carefully planned investigation into the manner in which the divers noxes bring about these physical and chemical changes.

While prevention is undoubtedly the ideal to aim at, it is imperative that curative treatment should be applied in all instances of developed disease. The medical practitioner is constantly called upon to alleviate the sufferings of persons affected with cardio-vascular disease, even if a restitution to the normal condition is admittedly impossible. In order to achieve some success in this endeavour, it is obviously necessary that a complete understanding should be gained of the processes leading to the symptoms of which his patient complains. Study is therefore needed for this purpose, as well as for the establishment of a sound method of prevention.

Dr. M. D. Silberberg and Dr. R. R. Stawell contribute an important chapter to the subject of modern cardiology. This method of attack has been singularly fruitful in extending our knowledge of the function of the cardiac muscle and of the defects which contribute to the large amount of death and suffering referred to above. The conservative clinician, like the old-fashioned pathologist, has taken a narrow view of this subject, and when faced with the statement that a sounder understanding of the mechanism of the disordered heart muscle has been achieved, he invariably retorts that the modern observations and newer doctrines have not led to the introduction of a single new remedy for heart disease. The fallacy of this argument is apparent when it is remembered that the researches of Einthoven, Mackenzie and Lewis, and of a score of others, have led to the scientific control of mechanical and medicinal measures applied in the varying disorders of the heart. The fundamental difference between the old and the modern conception of heart disease lies in the recognition of the fact that the safety or danger of the patient depends, not on the condition of the valves, but on the functional integrity of the muscle and its nervous supply. The instruments which record accurately the functional activity of the auricles and ventricles and of the conduction systems, furnish the physician with confirmation or correction of the minute diagnosis arrived at with the aid of the fingers, eyes and ears. Further observation and study is needed before the full significance of the electrocardiogram and of the pulse curve can be appreciated. Other information is needed, more especially in regard to the physico-chemical origin of the changes which are revealed in these records. The direction has been indicated for future searching and we would be sadly negligent, were we to revert to the former methods of analysing heart disorders, merely

because no one has discovered a better medicament than digitalis for augmenting the force of the systole and depressing the frequency of the heart beat. Each factor in the production of a disordered function of the circulatory apparatus must be closely and carefully investigated, and as fresh facts are brought to light full use should be made of our increasing knowledge in the handling of our patients.

EDUCATION IN RESPECT TO VENEREAL DISEASES.

The education of medical students in connexion with venereal diseases has been strenuously advocated before the Edinburgh Pathological Club by Brevet-Colonel L. W. Harrison, who is in charge of the Venereal Diseases Military Hospital, Rochester Row. He points out the deficiency of the present practice as judged by the small amount of knowledge possessed by medical practitioners, the necessity in the interests of the community for remedying these defects, and the lines on which the instruction of the student in respect to venereal diseases should be conducted. In support of his contention he states that he has rarely found among those men offering themselves for service in the Royal Army Medical Corps any precise knowledge of the method of diagnosis and treatment of gonorrhœa and syphilis in the early stages. It has been known for some years that the earlier the diagnosis of syphilis is made and the sooner treatment is commenced, the better is the outlook for the patient. If the medical practitioner waits for the development of the Wassermann reaction, the chances of obtaining a rapid cure are much diminished. It has further become known that there is nothing easier than the diagnosis of syphilis in its earliest stages. All that is required is a microscopical examination of the exudate from the sore under dark-ground illumination. The diagnosis can be made on the first day that the sore appears, before it has assumed its typical characteristics. It is also known that the application of an antiseptic to the sore before removing some of the exudation for examination makes it impossible to apply the microscopical method of diagnosis for several days. A similar lack of knowledge is seen in respect to the interpretation of the Wassermann test. Too often syphilis is excluded because the reaction is negative; on the other hand, every lesion coinciding with a positive reaction is considered to be syphilitic in nature, although it should be obvious that a syphilitic patient may suffer from other ailments than syphilis.

Colonel Harrison is of opinion that the surest way of coping with the absence of accurate knowledge of the diagnosis and treatment of venereal diseases on the part of the general practitioner, is by the introduction of a special course into the medical curriculum. He urges this matter on the ground of its public importance. He considers that there are excellent reasons for believing that the gonococcus and the *Spirochæta pallida* will be killed by the early application of antiseptics to infected parts. It is admitted that gonorrhœa can be aborted if treatment is applied before the discharge has become purulent. Statistics show that brilliant results in the cure of syphilis can be obtained when treatment is begun before the appearance of the Wassermann reaction. Colonel Harrison thus arrives at the conclusion that the disastrous effects of venereal diseases can be prevented by immediate sterilization in the first instance and by early and thorough treatment when this fails. If the general practitioner is to carry out effectively the prevention of the ills consequent upon venereal infection, he must be in a position to make a microscopical examination when required and to administer the first treatment whether it be for the abortion of gonorrhœa or the injection of a dose of neosalvarsan with a syringe.

A short course of instruction is all that is needed, provided that the patient is made the central feature of the teaching. It should be mainly of a practical nature. The student should first learn how to take specimens for examination and how to use the microscope effectively. He should be instructed how to interpret the reports of the pathologists in regard to the more technical tests. He should pass on to the treatment of syphilis and later of gonorrhœa. In this way the course would not require more than twelve to fifteen lessons. Whether this instruction form a portion of the medical curriculum or be reserved for post-graduate tuition, it will be of incalculable value to the profession and to the laity.

PATHOGENIC STAPHYLOCOCCI.

The discovery of a particular bacterium in connexion with an infection does not necessarily imply that it has any ætiological relationship with the disease. Koch recognized this principle when he established his postulates. Even when the organism appears to be but a secondary invader, caution should be exercised before a claim is made that it exerts a determining influence on the type of illness. This caution should be especially great when the organism is frequently found both under pathological and under non-pathological conditions. Many bacteriologists have reported the presence of staphylococci among other bacteria in the tissue fluids and tissues in cases of influenza. Staphylococci are frequent contaminants of the skin; they occur in air, soil, dust and water. Those who have studied the methods of cultivating bacteria from blood, have found it necessary to take special precautions to avoid air and skin contamination with staphylococci. So common is the occurrence of these organisms that the appearance of colonies in a culture tube inoculated with blood or other body fluids suggests a contamination. On the other hand *Staphylococcus pyogenes aureus* is regarded as the causal organism of certain suppurative conditions, while it is capable of inducing a phlegmonous or septicæmic infection in laboratory animals. H. T. Chickering and James H. Park, junior, have endeavoured to establish a grave ætiological rôle of *Staphylococcus aureus* in the pneumonia following influenza.[1] They found that at Camp Jackson among 8,100 patients admitted on account of an affection diagnosed as influenza, approximately 1,400 did not recover promptly, while many of them developed clinical signs of inflammatory changes in the deeper air passages

[1] *Journal of the American Medical Association*, March 1, 1919.

of the lungs. In many of these so-called pneumonias the illness was relatively mild. The majority of these patients ejected a sputum containing *Bacillus influenzæ, Micrococcus catarrhalis* or *Micrococcus flavus.* A small proportion of the pneumonia cases were of an entirely different type. The patient became critically ill after three or four days. A cherry-red indigo-blue colour was noted, and although the authors do not claim that this unusual form of cyanosis was seen exclusively in the cases in which *Staphylococcus aureus* was found, they maintain that the association of these two factors was very striking. They deal with 153 fatal cases of what they term stapylococcus pneumonia. Death occurred in 7.8% within five days of the onset, in 47.7% between the 6th and 10th days, in 26.7% between the 11th and 15th days and in the remaining 17.8% between the 16th and 40th days. It must be pointed out, however, that in 61 of these cases other organisms were found associated with the staphylococci, while in the same epidemic they failed to find this organism in the lungs of 159 persons dead of pulmonic complication of influenza. They do not record the number of times in which *Staphylococcus aureus* was found in the sputum during life either alone or in conjunction with other bacteria. In two instances this organism was recovered during life from the blood, but it is stated that relatively few patients were subjected to this method of examination. There is no precise record of the frequency with which *Staphylococcus aureus* was found in the pleural fluid, although it is claimed that the organisms can be recovered. In 14 cases cultures of *Staphylococcus aureus* were obtained from the lungs after death at the same time as the lungs were examined. In seven instances the staphylococci were associated with influenza bacilli, pneumococci or hæmolytic streptococci. In all the other fatal cases fluid was aspirated from the lungs by means of a syringe and used for making the cultures. A leucopenia was found in the so-called staphylococcus pneumonia cases as well as in many of the cases in which influenza bacilli or pneumococci were present. The authors state that when death took place late in the cases with staphylococci, numerous small abscesses were found in the lungs. The account of their experience contains many other details. The foregoing, however, represents the main facts concerning the association of staphylococci and post-influenzal pneumonitis or other inflammatory lung condition. It will be noted that there is a striking absence of evidence in support of the suggestion that the fatal lung condition is produced by these bacteria. The presence of innumerable staphylococci in the pus of the lung abscesses in protracted cases is certainly evidence of local invasion and of local pathogenicity. Whether staphylococci exert any general septicæmic or toxæmic action in the pulmonic complications of influenza is a question which must receive a much more definite answer than the two authors have yet offered.

INVALID AND OLD-AGE PENSIONS AND THE MATERNITY BONUS.

During the financial year ending June 30, 1918, 95,387 persons received old-age pensions and 29,912 received invalid pensions. This yields a total of 125,299 persons or approximately 2.5% of the population of the Commonwealth. There were 10,230 new pensioners receiving relief under the scheme of old age pensions. Roughly 20% of these persons had just reached the age entitling the individual to assistance. No less than 6,360 of these persons were between the ages of 61 and 70 years, while 1,567 were between the ages of 71 and 80 years. There was one individual who claimed the pension at the age of 101 years. According to the provisions of the *Invalid and Old-Age Pensions Act, 1908-1917,* men between the ages of 60 and 65 years are not eligible for old-age pensions unless they are permanently incapacitated for work. A glance at the table published by the Federal Treasurer reveals that no less than 1,145 men were granted relief on having attained the age of 65 years, as compared with 107 of the age of 64. The maximum amount that an old-age pensioner can receive is 25s. per fortnight. The actual average amount paid was £1 4s. 1.67d. There were 81,486 pensioners in all receiving the maximum old-age pension on June 30, 1918.

Invalidity pension is paid after consideration of claims based on incapacity to work owing to physical or mental disabilities. There were 7,056 new claims made during the year, while 572 were under consideration on July 1, 1917. The number of claims rejected was 1,701. The number of pensions granted during the year was 5,482. Of these people 167 were but 16 years of age. A further 83 were 17 years of age. The number of new pensioners between the ages of 18 and 46 years varied between 54 and 90 in the several age groups. The frequency of invalidity, as judged by the number of pensions granted in the year, increased relatively rapidly after the age of 46 and reached a maximum at the age of 58 to 59. It will be noted that the old-age pension is payable to individuals attaining the age of 60, with the restriction mentioned above. It would thus appear that if the incapacity for which these pensions are granted, is dependent on invalidity, a proportion of the people who are in receipt of the old-age pension are also invalids in the strict sense of the word. Invalid pension is paid to 6‰ of the population of the Commonwealth and from this figure it would appear that not less than 1% of the population are unable to earn a living on account of some physical or mental disability and at the same time have not been provident enough to provide for this disability. We venture to assert that the two classes which contribute most largely to this burden of invalidity are the sufferers from cardio-vascular disease and the mental defectives or morons. The figures reveal a very deplorable absence of forethought and a widespread improvidence which does not augur well for the future of the Commonwealth. It also demonstrates that the authorities are short-sighted in the extreme in not bestirring themselves to reduce this vast horde of incapacitating disease, much of which is surely preventible. Nearly one million pounds were expended in the twelve months on invalid pensions and nearly three millions on old-age pensions. It would be economical to expend even a large sum of money on research into the best means of preventing the causes of the invalidity, since this

would be equivalent to an investment of capital, and would not rank, as the payment of the pensions does, as unproductive expenditure.

During the financial year ending June 30, 1918, 126,885 maternity allowances were paid to mothers. We are pleased to note that the number is lower by about 11,000 than the average for the previous four years. There was also a diminution in the number of rejected claims. The cost of administration of the Maternity Allowance works out at £1 18s. 7d. per each £100 paid as bonus. It is open to question whether the needy mothers actually benefit by the bonus. It would be advisable if a thorough investigation were made into the conditions under which the bonus is received and if the grant were so adjusted that the money would be utilized to improve the health of women with small means both prior to the birth of their babies and also during the puerperal and lactating periods.

PNEUMONIC INFLUENZA.

A proclamation is published in the *Commonwealth of Australia Gazette*, No. 59, of May 16, 1919, declaring the State of Queensland a Quarantine Area, on account of the existence of influenza.

The Commissioner of Public Health, Queensland, has issued a series of regulations under the *Health Act, 1900* to *1917*, to be known as the Influenza Regulations. They are published in the *Queensland Government Gazette* of May 21, 1919, together with the proclamation necessary to render these regulations effective and an order rescinding previous regulations relating to inter-State traffic. The new regulations, like those which were published in *The Medical Journal of Australia* of May 24, 1919, empower authorized medical practitioners to examine and to isolate persons suffering from influenza and others who have been in contact with patients. Persons who leave a place where anyone is being isolated on account of influenza, are liable to a penalty not exceeding £50. An authorized medical practitioner may enter any premises and may examine the premises and anyone in them, for the purpose of ascertaining whether any infection exists. He may also make a house to house inspection. A local authority, a joint board or a medical officer of health may order the disinfection of public places, including public conveyances. It is ordered that all utensils used in refreshment rooms, hotels, boarding houses, etc., must be boiled for five minutes in water containing washing soda. Drinking glasses, however, may be washed in clean, running water. No cracked crockery or utensils may be used in these places. No table napkin shall be placed on a table for use by any customer, unless it shall have been thoroughly washed and cleaned since the last occasion of use. In places where beverages are sold and where water under pressure is available, a properly constructed sink must be fitted under the tap. Glasses used for greasy substances, such as ice creams, must be washed in boiling water containing soda. When water under pressure is not available, the inspector may determine the means of cleaning glasses. If the occupier fails to observe these instructions, he may be prohibited from selling beverages otherwise than in unopened bottles. The use of a common towel, of a common drinking cup, glass or other vessel, is prohibited in any shop, office, factory, lavatory, train, ship, hotel, boarding house, school, church or Sunday school. No person shall spit elsewhere than into a covered receptacle or a cloth or handkerchief.

No person shall sell or offer for sale or advertise any article, substance or thing as a remedy or cure for influenza, unless and until he has permission in writing from the Commissioner of Public Health to do so. No advertisement of this kind may be published or printed. The penalty for breaches of the regulations is a fine not exceeding £50.

In additional regulations the Commissioner of Public Health is empowered to order the closure of any public place or premises, when he deems this necessary for the purpose of preventing the spread of influenza, and he is also given power to order persons in public places, conveyances, etc., to wear masks.

The Commissioner of Public Health in a notice published in the *Queensland Government Gazette* of May 22, 1919, orders the closure until July 31, 1919, or later, of every church, Sunday school, school or college, place of public amusement, gymnasium, etc.. A church, however, may be opened, if the services are limited to three quarters of an hour, if alternate seats are kept vacant, if regular disinfection is carried out, and if persons suffering from coughs, colds or other sickness are excluded. Open air schools, places of amusement, etc., or buildings without a roof used for these purposes, are exempt from the order, provided that persons suffering from colds, coughs or other sickness are excluded. The order does not apply to any local authority meeting, meetings of committees of associations, societies or similar institutions, boards of directors or to any meetings at which there are present not more than 20 persons. The order applies to the areas of Brisbane, South Brisbane, Ipswich, Rockhampton and Toowoomba and to other specified places.

Seventeen further proclamations dealing with pneumonic influenza have been issued in the *New South Wales Government Gazette* between the dates of May 16 and May 22, 1919. The total number issued stood at 70 on May 22, 1919.

According to these proclamations, the Municipal Area of Coraki and the Town of South Woodburn, the Municipal Area of Mullumbimby, the Town of Bangalow and Tweed Shire are declared to be infected areas and the restrictions imposed on persons within infected areas are applied to these areas. The declarations that Crookwell, Jerilderie, Adamstown, Hamilton, Lambton, Merewether, Newcastle, New Lambton, Stockton, Wallsend, Waratah, Wickham, the Municipal Areas of Picton and Dubbo, Cootamundra, Junee and Blayney, part of Cessnock Shire and the whole of the Shire of Gadara, together with the Municipal Area of Lithgow, are infected areas, are cancelled and the restrictions imposed on persons within these areas are lifted. A general order is given requiring a person leaving an infected area by a train, motor-car or other vehicle, or by ship, boat or other vessel for any destination ten miles or more beyond the boundary of the infected area, to produce a declaration that he has not during the previous two days knowingly been in contact with any person infected with influenza and to produce a certificate from a duly qualified medical practitioner issued not more than 24 hours previously to the effect that he shows no signs of being infected with influenza.

The restrictions imposed on persons travelling by train between Newcastle and West Maitland or between Sydney and West Maitland for a destination beyond West Maitland are cancelled. The order requiring persons to wear masks on ferry boats and wharves is also cancelled.

We announced in a recent issue of the *Journal* that the Federal Quarantine Service was extending its activities by the creation of eight new positions for junior medical officers. Five of these appointments have now been filled. Dr. O. Joynt, of South Yarra, and Dr. C. K. Cohen, of Sydney, have seen active service. Dr. L. J. Shortland and Dr. G. F. Hewer are recent graduates. The fifth name is given as Dr. H. S. Welch. We can find no practitioner of that name. It is possible, however, that the entry in the *Commonwealth of Australia Gazette* contains a typographical error, and that the practitioner appointed is Dr. Harvey Sylvester Walsh, of Brisbane, a Sydney graduate of the year 1913.

We learn that the members of the Medical Council of Tasmania have appointed Dr. E. T. Macgowan the Secretary of the Council and Dr. H. N. Butler the Treasurer of the Council. Dr. Butler is a member of the Tasmanian Branch of the British Medical Association.

The announcement is made in the *South Australian Government Gazette* of May 22, 1919, that Mr. Milton Moss Maughan, B.A., has resigned his position as Director of Education.

The death of Dr. Henrich Rabl, of Murtoa, Victoria, has been announced.

Abstracts from Current Medical Literature.

MEDICINE.

(193) Epidemic Meningitis.

C. W. Duval observes that epidemic cerebro-spinal meningitis or spotted fever has prevailed in the United States sporadically and in epidemics since 1905 (*New Orleans Med. and Surg. Journ.*, January, 1919). Further, the disease is pandemic over the world, having in the past three years appeared in practically every European country. The war was, in a large part, responsible for its spread and universal distribution. It is an old foe of the armed camp, having ravaged the armies from the earliest recorded times. The meningococcus is unknown in nature outside the human host. It is spread solely by one individual to another. The meningococcus is disseminated, kept alive and propagated through the medium of the healthy human carrier. Some carriers harbour it for weeks, months or years. To break the circle, the carrier must be detected and isolated. The meningococcus always enters and leaves the host by way of the secretions from the naso-pharynx. It passes directly back to the meninges *viâ* the lymphatics or indirectly through the blood. Therefore, antitoxin should be administered intravenously, as well as intraspinally, in all cases. There is reason to believe that the coccus sojourns for a considerable time in the naso-pharyngeal secretion prior to entering the body. On the mucous membrane it seems to lead a truly saprophytic existence, since it multiplies in this situation freely, without exciting any response on the part of the host. During this period the patient is a "transient" carrier. If infection is not established early the individual becomes a "chronic" carrier, and one who rarely becomes infected. Why the chronic carrier is refractory cannot be explained on the basis of there having been acquired an immunity during the carrier stage, for, in the absence of serological proof, it is demonstrated to the contrary. It can only be assumed that the human species is not highly susceptible to meningococcal invasion. True, healthy carriers rarely contract the disease and they outnumber, by thirty to one, the persons who develope meningitis in any area. The mechanism of dissemination consists in the dissemination of nasal secretion into the outside world. Infectious material is transferred to others, who, if near, inhale the germ-laden particles. There are at least four types of meningococcus, and possibly others not yet recognized. These types are, serologically, not related; they represent separate and distinct species. The antitoxin produced by any one of the so-called types is only of value in the treatment of the infection caused by that particular meningococcus. What was formerly thought to be a polyvalent serum has, in most instances, proved to be nothing more than monovalent, because all the cultures used were discovered later to be of the same type. In treatment, it is essential to determine the type of infecting organism and then to give the monovalent or homologous serum, both intraspinally and intravenously.

(194) Relapsing Fever.

J. C. McWalter describes some cases of relapsing fever (*Medical Press*, March 12, 1919). The onset is sudden; the patient feels giddy, with frontal headache, pains in the back and limbs, rigors and vomiting. The pulse is about 115. Temperature may reach 41.1° C., though the writer never saw it over 40° C., except when complicated by malaria. The patient becomes prostrate and delirious. The skin is a dirty, dusky, yellowish or brownish hue. There may be a rash and often jaundice. The spleen and liver are enlarged. There is frequent vomiting and restlessness, but not the deep lethargy of typhus. After a high temperature for about six days, the first crisis takes place. There is sweating and diarrhœa. The fall of temperature is sudden and may amount to 4° or 5° C. in twenty-four hours. Sickness disappears and the patient is anxious to get out of bed. In most of the cases relapse occurred in about eleven days. The temperature does not go up so high in the relapse and does not remain up for more than about three days, but the patient emerges from the relapse more slowly and remains exhausted and anæmic for some time. There may be a second and third relapse, but in the author's cases, organisms could not be detected after the first relapse. Nearly all the patients seen in Egypt have had malaria as well as relapsing fever, and many of the relapses were probably due to malaria. but the malarial organisms could not, as a rule, be found. Obermeyer's organism could not be found in some of the cases under definite febrile conditions, where the disease was clinically a relapse, but in every such instance the patient was taking arsenic, quinine or iron. If these drugs prevented a recognition of the spirillum, they did not always prevent a relapse of the fever. Salvarsan or kharsivan is said to be a specific. Arsenic in some form is the necessary therapeutic agent. In the author's opinion, a man can scarcely ever be accurately declared to have completely recovered from an attack of relapsing fever, or of malaria or dysentery, contracted under the conditions of active service. Relapsing fever patients remain for a considerable time anæmic, intensely weak and unfitted for any but the slightest exertion. Mental hebetude, depression, dulness, weariness, inertia; all these are real drawbacks to a man who has to fight for a living under the strenuous conditions of modern life. No man can say that a patient has absolutely recovered from an attack of relapsing fever contracted during the war, because no man has watched the case long enough to decide its influence on the life-history of the patient.

(195) Intravenous Injections of Arsenious and Mercuric Iodides in Syphilis and Yaws.

R. L. Spittel experimented with various preparations of mercury, iodides, arsenic and antimony (*Practitioner*, October, 1918). In an emergency, a very efficient injection may be made out of ordinary Donovan's solution, which was the first solution used by the author in his earlier experiments. The solution he finally used as a routine was as follows: mercuric iodide, 3.24 grm.; arsenious iodide, 2.59 grm.; sodium or potassium iodide, 1% sol., 28.42 c.cm.; aqua dest. to 1,000 c.cm., 8 to 15 c.cm., form a dose for an adult. The dose should be small to begin with, and gradually increased according to tolerance. Four to six injections at intervals of four to seven days constitute a course. Several such courses should be given with intervals of four to six weeks between them. The author concludes that intravenous injections of arsenious and mercuric iodides constitute the best method of administration of mercury and iodide in syphilis and yaws. As evidence of this he cites, besides the beneficial and quick results obtained, the constant appearance of the inflammatory reaction, which may be taken as a measure of spirillicidal efficiency. The drugs are useful in all stages of syphilis and yaws, in that they are also capable of bringing about the absorption of new formations and infiltrations in the primary, secondary and tertiary stages of both these diseases. It is not claimed that these drugs should replace salvarsan and its derivatives, but rather reinforce them. When the latter cannot be procured, the injections advocated suffice to bring about a cure. These solutions are easily prepared and administered, and their cost is infinitesimal when compared with salvarsan. The moist framboesiform papules of secondary yaws are rendered dry, and heal under their scabs, but not quite as quickly as with salvarsan. The pains in the bones and joints quickly disappear. In tertiary yaws, recent and painful nodules become painless and quiescent after one or two injections. Nodules that have existed for months or years are not reduced with the same rapidity; repeated injections eventually cause the disappearance of many of these.

NEUROLOGY.

(196) Sensation and the Cerebral Cortex.

Henry Head (*Brain*, Part II., 1918), in continuation of his previous researches on sensation, now deals with the disturbances resulting from lesions of the cerebral cortex and uses as material 23 exhaustively-examined cases

of war injury of the brain. He refers to the well-known truth that a gross lesion of the so-called "sensory cortex" does not abolish any of the four primary qualities of sensation, as does a lesion of the brain-stem or spinal cord, and yet in a case of such cortical injury the answers of the patient to tests show that these qualities are in some way disturbed. It is to the precise examination of these disturbances that Head has applied his experience, and he finds that if the sensibility of the hand, for example, be carefully tested, disturbances, perhaps confined to certain digits, will be revealed. These disturbances will affect, not crude recognition of touch, pain, heat and cold, but three discriminative faculties. (1) The recognition of spacial relations, in particular the recognition of passive movement of the affected part. Discrimination of two compass points and the topical localization of stimuli, which come within this faculty, may also be disturbed, but in lesser degree. (2) Appreciation of differences in intensity of pain, touch, heat and cold. To test capacity in estimating these differences is hard. "Appreciation of heat and cold, as we are forced to examine it clinically, depends comparatively little on cortical activity. For whilst it is easy to say whether an object is hot or cold, it requires an intelligent patient and unusually favourable conditions to test the relation of two warm stimuli to one another, or to determine the threshold for heat and cold with approximate accuracy. These difficulties are multiplied a hundredfold in the case of pain." In the case of touch, however, useful results may be obtained by measurement with tactile hairs of graduated strength. (3) The recognition of similarity and difference, thus, the size, shape and weight of objects and the texture of stuffs, apart from their purely tactile qualities. These are the three faculties which fundamentally depend upon the activity of the sensory cortex. Head's next object is to explain the manner in which the *cortex cerebri* modifies the afferent materials it receives. In doing this he relies upon the study of dissociated sensibility, of the consequences produced by interferences at various known points in the nervous system, where some impulses are intercepted, while others pass on to reach the highest receptive centres and form the underlying basis of an abnormal sensation. "The clue to the situation is given by the behaviour of the optic thalamus. Until recently the part played by this organ was unknown. But we now recognize that it is the seat of those physiological processes which underlie crude sensations of contact, pain, heat and cold, together with the feeling tone they evoke. The essential organ of the optic thalamus is the centre for the affective aspect of sensation, whilst discrimination and spacial projection are the product of cortical activity." And it follows that if a lesion be subcortical a mixed disturbance will result, one having both thalamic and cortical characters, either dominating in accordance with propinquity to the respective levels. Touching the term "level," Head is careful to point out that, following Hughlings Jackson, he uses the term in its physiological rather than its anatomical sense. In addition to sensory changes, an uncomplicated lesion of the sensory cortex may produce hypotonia; this is a slight, but unmistakable change, best seen in the hands, completely different from paralytic hypotonia and closely associated with the failure to recognize posture and passive movement. Concerning the anatomical localization of these cortical sensory functions, they may be placed in the pre- and post-central convolutions, the anterior part of the superior parietal lobule and the angular gyrus. But it is the functions rather than the anatomical relations of any one part of the body that are represented in these centres. Hence, those portions, such as the hand, which are endowed with the highest powers of discriminative sensibility, are most exclusively represented. Next in order comes the sole of the foot, which constantly exerts a discriminative action in walking. Accordingly, a cortical lesion may disturb the sensibility of the hand and foot without of necessity affecting the elbow, shoulder or knee.

(197) The Neuro-Visceral System.

Harry Campbell (*Medical Press*, October 9, 1918, *et seq.*) in a series of articles gives a concise account of our present knowledge of that portion of the nervous system which controls the activities of gland cells and unstriped muscle fibres—the neuro-visceral system. This system was thought to be the homologue of the primitive nervous system of the invertebrates, and to be independent of the central nervous system. Both these suppositions are erroneous. It is now known that the neuro-visceral system is intimately bound up with the central nervous system, and that the visceral ganglia and nerves constitute no more than an outflow from that system. The neuro-visceral system thus consists of a central and a peripheral portion. The peripheral portion pervades the whole organism. So extensive, indeed, are the visceral nerves and ganglia that, were all other tissues to disappear, there would remain a kind of gossamer scaffolding, so close in texture as scarcely to admit the passage through its interstices of a single ray of light. That visceral centres exist in the *cortex cerebri* is shown (*a*) by experimental stimulation, which produces alterations in pulse-rate, and so on; (*b*) by the bodily accompaniments of sensations and emotions. It is as certain that intermediary levels exist. The peripheral system consists of ganglia and nerves; and though part and parcel of the central system, connected by afferent and efferent strands and developed from the same embryonic ectoderm, it is nevertheless capable of a considerable degree of independent activity, thus, intestinal peristalsis persists after section of the vagi and splanchnics. The efferent strands of the peripheral system consist of at least two consecutive neurons, the primary "connector" neurons of Gaskell, connecting central nervous system with ganglia, and secondary neurons, leading from ganglia to viscera. The afferent strands are made up of single neurons which establish various central connexions. Two functionally distinct portions enter the composition of the peripheral system, namely, the thoracico-lumbar or sympathetic and the craniosacral or parasympathetic. The parasympathetic ganglia are all situated in or near the tissues they supply, while the sympathetic ganglia are usually at a distance. The germ of the sympathetic system is represented low down in the animal kingdom by "chromaffin cells," which yield adrenalin and play an essential part in the maintenance of vascular tone. In the efferent sympathetic system, the neurosomes of the primary neurons are situated in the intermedio-lateral portion of the spinal grey matter, their slender axones constituting the fine preganglionic fibres. These leave the spinal cord by the ventral roots of all the thoracic and the first two or three lumbar segments. Having reached the corresponding mixed nerves, they issue from them by the white *rami communicantes* and enter the gangliated cords of the sympathetic. These ganglia consist of the proximal, vertebral or lateral, the intermediate, prevertebral or collateral and the distal or those of the segmental-duct organs. From these three systems of ganglia non-medullated post-ganglionic fibres proceed to their several destinations. In general terms the ganglia of the gangliated cords provide fibres for the craniospinal nerves; the intermediate ganglia for all the viscera save those of the segmental duct; the distal ganglia for the organs of the segmental duct. The entire body receives sympathetic fibres. The limbs and body wall are supplied by the sympathetic alone. The following regions receive both sympathetic and parasympathetic fibres: the orbital contents, the glands of the nasal fossal, naso-pharynx and mouth, the thoracic and abdomino-pelvic viscera and the cloacal cutaneous system. Involuntary muscle fibres may be excited or inhibited by visceral nerves. The action of the vagus in slowing the heart, of the *chorda tympani* in causing dilatation of the arteries supplying the submaxillary gland, and of the pelvic nerve in bringing about relaxation of the bladder, are instances of inhibition. In the case of all organs which are furnished with antagonistic muscles (heart, pupil of the eye, bowels, etc.), the sympathetic and parasympathetic act antagonistically, affording an admirable instance of reciprocal innervation, *i.e.*, innervation which causes contraction of one set of muscles and relaxation of their antagonists. The neuro-visceral system also acts on gland cells, supplying them with fibres which control their secretory activity. These fibres actually end in the gland cells, and their severance causes atrophy of the cells in which they terminate; thus division of the *chorda tympani* causes atrophy of the submaxillary gland.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on April 2, 1919, Dr. J. Ramsay Webb, the President, in the chair. Owing to the technical difficulties connected with the reproduction of the electrocardiograms and polygraphic records illustrating Dr. Silverberg's paper, we have been unable to publish the papers and discussions in an earlier issue.

Dr. M. D. Silberberg read a paper entitled "Notes on Auricular Flutter and Other Cardiac Cases" (see *The Medical Journal of Australia*, May 24, 1919, page 415, and this issue, page 435).

Dr. R. R. Stawell read a paper on "The Modern Treatment of Disease and Disorders of the Heart" (see page 439).

Dr. H. Hume Turnbull said that the accurate recognition and study of irregularities was of very great value in the treatment and more especially in the prognosis of cardiac conditions. For example, in auricular flutter, since this condition has been recognized as the definite cause of the great majority of paroxysmal tachycardias, it was possible to separate it from simple palpitation due to a cause outside the heart and dependent on nervous or other influences. Although it was not usually possible to discover the underlying pathology in cases of auricular flutter, they recognized in them the presence of a disordered rhythm. It was known that if the flutter lasted more than a few days and if the ventricular speed was high, good could be done in many cases when the heart began to fail and a complete return to normal rhythm could be induced in a few cases by the adoption of a definite plan of treatment. Digitalis in full doses increased the block in most cases and consequently slowed down the action of the ventricle. This allowed the ventricle sufficient rest to restore its function, at least in part. In many cases, perhaps one-third of the total number, the auricle could be made to fibrillate and then, if the drug were stopped, the fibrillation passed back into normal rhythm. It was certainly impossible to state beforehand what would be the result of treatment. They knew, however, when to treat and had knowledge of at least one line of treatment which was promising. Rest in bed and small doses of digitalis were useless in the presence of auricular flutter with failure. It was recognized that in some cases of flutter there was no heart failure. In sinus arrhythmia in children and young adults it was surely of value to recognize that the condition was normal and that treatment, besides being calculated to hinder the child's proper development, was quite futile. The recognition of the harmlessness of this arrhythmia would prevent much distress.

No one who had seen the extremely rapid development of grave heart failure in paroxysmal tachycardia or auricular fibrillation, with urgent dyspnœa, great dilatation and œdema of the lungs, etc., and the immediate relief when the normal rhythm was restored, could doubt that the old doctrine of back working failed hopelessly as an explanation.

Dr. Turnbull stated that it was now recognized that heart failure dependent on auricular fibrillation would not be cured by rest alone, but required digitalis or one of the digitalis group given in full doses and that the drug must be continued when the patient returned to work. Heart failure with normal rhythm often cleared up with rest alone. It was not necessary, as a rule, to administer digitalis to retain a satisfactory result. They had further learned to recognize some, at least, of the dangers and effects of digitalis given therapeutically. The field was enormous and the facts few. In conclusion, he wished to point out that many of the cases of soldier's heart were exactly similar to those described by Mackenzie in the first edition of his book (1908) as poisoned heart or toxic heart and that the method of treatment used was merely an elaboration of the method described in that book.

Dr. J. W. Springthorpe considered that the methods adopted at the military hospitals should be followed in the treatment of heart condition. The patients were given graduated exercises, controlled by the appearance of breathlessness, alteration in the pulse-rate and volume, vertigo, etc.. It appeared to him that the rational way of treating heart disorders was to ascertain what the treatment could do and not what was to be seen on the screen.

In his reply Dr. Silberberg stated that the paper read by Dr. Stawell had reference chiefly to treatment, which he had not been able to discuss in his paper at all fully, owing to lack of time. The underlying principle of treatment was an exact diagnosis. He claimed that it was in this direction that progress had taken place. He failed to understand how a rational line of treatment could be planned, including the general management of patients, unless the mysterious actions of the heart were elucidated and their mechanism understood. For example, in a case of sinus irregularity which was harmless, common and did not need treatment, it was quite impossible, without having recourse to graphic methods, to make a diagnosis when the pulse was slow (40 to 50 per minute) and the pauses long. Yet it was supremely important to recognize the condition; otherwise, needless alarm would be caused, or a heart block might be overlooked. Extra systoles, especially when they occurred very occasionally, could be disregarded, but when they were frequent they caused a certain amount of invalidity, apart from that due to nervous conditions. The cardiographic curve taken in the case of a patient, a girl of 21, was unique. It indicated a serious upset in the ventricle and he believed that this upset was responsible for her sudden death. At times extra systoles were associated with, and possibly initiated, more serious arrhythmia. More exact means of diagnosis and larger statistics were required, in order that the unusual forms of extra systoles which were likely to be of clinical importance, might be recognized.

Dr. Silberberg referred to the work of the British Medical Research Committee on soldiers' heart or "effort syndrome," so-called. They had been able to separate this into various groups and had ultimately come to the conclusion that they were not primary heart diseases, but a complex condition in which sympathetic disturbance played an important part. Cases of effort syndrome were not uncommon in civil practice, either in males or in females.

It was sometimes stated or inferred that when a practitioner was interested in special methods, he necessarily neglected the ordinary clinical means. Nothing was further from the truth. It was necessary to recognize the interaction of the various organs, the nervous system, the ductless glands, etc., and the heart. In no case could a general examination safely be neglected. There had been real advance in cardiac work, not so much in the treatment of gross conditions where the only remedy would be preventive, but in the understanding and more rational treatment of various heart disorders. Attacks of palpitation called for very careful enquiry, in order that simple tachycardia of nervous or toxic origin might be distinguished from true paroxysmal tachycardia belonging to the arrhythmia group. He agreed with Dr. Turnbull that back working was not the only factor in heart failure. In regard to severe heart failure in children in whom the results of treatment were so variable, he felt that the factor which enabled some to clear up was free diuresis. The œdematous fluid was drained by this means, the tissues recovered their functions and the improvement in the patient's condition was progressive. At times, digitalis sufficed for this purpose, while in other cases theobromine and salicylate of soda (trade name, diuretin) proved more beneficial. Digitalis was useless in an elderly man with a very large heart, aortic regurgitation with failure, œdema, pleural effusion and cardiac asthma—notoriously a bad type. A few doses of theobromine and sodium salicylate produced free diuresis; 3, 2.4 and 2.4 litres were passed on three consecutive days; the œdema disappeared and the patient recovered sufficiently to return to light duties. He died some three years later. As Dr. Springthorpe had emphasized, valve lesions were of small importance if the heart muscle was sound and showed good response to exertion. This was the real test of a man's fitness. He cited the case of an old Crimean veteran who had attended the Melbourne Hospital Out-Patients' Department for over 20 years with all the classical signs of aortic regurgitation and anginal attacks. The late Dr. John Williams had used this patient at the clinical examinations. He had had no heart failure during the 20 years, although the defect must have been present all the time. Many soldiers had had well marked valvular disease and had remained well on active service

during the war. When the muscle remained sound, the heart was quite capable of overcoming the mechanical disabilities. This was not necessarily effected by hypertrophy.

Apart from progressive aortic disease due to syphilis or to degenerative changes, mitral stenosis gave the worst prognosis. He had, however, recently had experience of a case in which the valve became affected in childhood and the symptoms of heart failure did not set in until the patient was 57 years of age. In conclusion, he wished to emphasize that improved methods of diagnosis made for more exact knowledge on which rational treatment and a reliable prognosis could be based.

L. W. Gall, Esq. (B.M.A.), M.B., Ch.M. (1918, Univ. Sydney), of the General Hospital, Brisbane, has been elected a member of the Queensland Branch.

The undermentioned have been nominated for election as members of the New South Wales Branch:—

Arthur John Metcalfe, Esq., M.B., Ch.M. (1918, Univ. Sydney), 206 Stanmore Road, Stanmore.

Vennard Francis O'Neill, Esq., M.B., Ch.M. (1918, Univ. Sydney), "The Grange," Pitt Street, Kirribilli Point.

Ebenezer Alexander Sanbrook, Esq., M.B. (1915, Univ. Sydney), Arcadia Street, Penshurst.

William Reginald Darton, Esq., M.B., Ch.M. (1919, Univ. Sydney), Lewisham Hospital, Lewisham.

John Thomson Anderson, Esq., M.B., Ch.M. (1914, Univ. Sydney), Ben Boyd Road, Neutral Bay.

Correspondence.

POST-GRADUATE COURSES FOR RETURNED MEN.

Sir,—I certainly hope that the idea embodied in the article in your journal of March 29, 1919, on medical re-education will not lapse.

Such a post-graduate course would be of very great value to many of those men recently returned and still to return. After allowing for the large number of newly-graduated men, who, as you say, could be arranged for by being taken on at general and special hospitals as resident medical officers, to fulfil a very necessary part of their medical education there would still remain a large number of men, the majority of whom were, at best, recently qualified, or had been in private practice but a few years at most when the call came. For this class, such a post-graduate course as you suggest is almost a necessity, just as much as it is for those younger medical men who propose to join a hospital as residents.

My own case, if I may be allowed to cite it as an example, is typical of many among recently-qualified men. I took my degree in 1910, did the usual year or eighteen months as resident medical officer to a general hospital, then got some money together by doing locums, and when the war broke out had been fifteen months in private practice.

My work has been practically all in the field, and so I have not had the advantages of medical and surgical work enjoyed by some who were on the staffs of general hospitals or casualty clearing stations.

To some extent only I have made good the loss since my return by doing six months residential work in diseases of children and of women. But I can assure you that I would welcome a post-graduate course embracing other branches of medicine and surgery. I know of several returned men who, like myself, have gone into residence at various hospitals because of that feeling of loss of confidence, to a certain extent, in their work, and that feeling is all the more strongly borne in on one after return to Australia.

It behoves us to make an early start in perfecting any preliminary arrangements necessary for such a post-graduate course, so that we may be ready to launch it when all, or nearly all the absent medical men have returned.

Such a course in connexion with each of our Australian medical schools should then be a forerunner of regular winter or summer sessions. Let it always be remembered that the standard of any group or body of medical men is judged, not by the brilliance of the half-dozen acknowledged leaders of such a group, but by the ability and knowledge of the general practitioners therein.

I had a conversation with General Sir Neville Howse in England during 1917 on the subject of post-graduate work in Great Britain after the war for those medical officers who had spent most of their time in the field, as distinct from the lines of communication and the base. He was entirely sympathetic and said that he would try and arrange such facilities for all who desired them. Judging from recent information on the subject his ideas are bearing fruit. There is a far greater need here in Australia for our taking such a step.

Yours, etc.,

"SUBURB."

May 19, 1919.

WHITE SETTLEMENT IN TROPICAL AUSTRALIA.

Sir,—We are greatly indebted to Drs. Breinl and Young for giving us the results of their very elaborate and painstaking study of the above subject and their attempts to throw further light on it. The problem is referred to as being complex, and so it is, as regards the working of the various effects of heat, light, food, clothing, tropical diseases, etc., but the practical question at issue is a very simple one, namely: Can white races permanently colonize and develope tropical Australia without the assistance of coloured labour? The answer to that must be an unqualified "No." The problem is made difficult by our vain efforts to try and maintain what history and the laws of Nature have proved to be impossible. Man is subject to the same natural laws as other animals and plants. The various races of mankind can only thrive in their natural environment. Just as a python or a palm cannot live in the arctic regions, or a polar bear or an ice plant in the tropics, so whites cannot survive for any length of time in tropical countries. History of human migrations for thousands of years proves the same truth. We know of the extinction of the Aryan conquerors of India and Ceylon, of migrations of intellectual races into Egypt again and again, but in each case they died out, leaving the native fellah to survive. To come to more modern times, the Spaniards have almost entirely died out in Mexico. Spanish Americans, like Anglo-Indians, have not been able to survive to a third generation. We see the negro gradually, but surely, squeezing the whites out of the southern states of North America, while they in turn cannot survive in the north. There is no need to multiply examples; there is the universal testimony of history available to anyone to read. The white man's rule and the white man's burden have existed for thousands of years. The various races of mankind can only thrive in their ancestral zones.

In my address to Congress in Sydney in 1911, after some reference to the effects of tropical life and heat and protozoal diseases, I said:

> These and many other facts, which there is no time to refer to, show that whites can never permanently and continuously occupy the tropics. . . . The facts before us and the more immediate conclusions to be drawn from them are of concern to us in regard to colonization of Northern Australia. Here we have a tropical country which is unique in having no native coloured races sufficiently numerous, or willing, or able to help in developing the country . . . and if we are to believe in history and natural selection, it would appear to be inevitable that if we are to continue to hold this fine country we must either let it remain unproductive, or comparatively so, or we must evolve some scheme by which we can develope it by using coloured labour.

It should not be difficult or undesirable to legislate for coloured labour to be indentured for a fixed period and the labourers then repatriated, as was formerly done with kanaka labour on the sugar plantations.

It is no argument to point to individuals who have lived a long time in the tropics and survived and perhaps enjoyed good health. Can these immigrants produce children who will in turn produce a third generation? Drs. Breinl and Young, whilst investigating the question of the possi-

bility of whites living in the tropics, do not go into the question of their ability to survive when doing manual work, and no country can be developed without manual labour. The only successful development by whites of tropical countries has been by coloured labour under the supervision of whites, who only remain there for short periods. To this statement I know of no exception. It has been found that whites cannot do more than 4½ hours a day of mental work in the shade of houses without developing tropical neurasthenia. It is only politicians and those whose ardent desire for a white Australia is so great that they close their eyes to facts, who profess to think that tropical Australia can be an exception to a universal law of nature. What has been our short experience of attempting to develope tropical Australia by white labour? It is a thousand pities to see this fine country wasted for the want of the one thing needed to develope its enormous resources, namely, coloured labour.

Yours, etc.,
F. ANTILL POCKLEY.

227 Macquarie Street, Sydney,
May 20, 1919.

Obituary.

WILLIAM DANIEL CAMPBELL WILLIAMS.

Death has robbed the medical profession of a great pioneer. On May 10, 1919, William Daniel Campbell Williams ended his career on earth at the No. 11 Australian General Hospital at Caulfield in an environment that was the dearest to him for over the third of a century. The funeral took place on the 12th with full military honours and with representation of every branch of the Australian Army.

On July 20, 1856, a son was born to the late Dr. William James Williams in Sydney. We have no record of his early years of life, save that at a young age he went to the New School in Sydney and towards the end of the 'sixties he entered the Sydney Grammar School. He was immensely popular among his comrades, probably more because of his athletic prowess than on account of any diligence or intellectual superiority. On leaving school, he travelled to Europe and entered the University College Medical School, where he made the best use of the excellent tuition available to the students. At the age of 23 he passed the examination for the membership of the Royal College of Surgeons of England and he won a gold medal in surgery at the University College. In the following year he took his Licentiate of the Royal College of Physicians of London. He held a house appointment at the University College Hospital. At the end of 1881 he returned to New South Wales and started practice at Darlinghurst, Sydney. He was appointed an Honorary Surgeon at St. Vincent's Hospital soon after. In the following year he embarked on a special career, in which he gained great distinction at each stage. He was appointed Staff Surgeon of the New South Wales Artillery and, on the outbreak of hostilities in the Soudan, he was promoted to Surgeon-Major and Principal Medical Officer of the Australian Soudan Contingent. He proved himself an admirable medical officer in the field, was mentioned in despatches and, on his arrival in England, he was awarded the Khedive Star for distinguished services. His bent for military work led him to Aldershot, where he underwent further training and where he passed an examination as Instructor in Army Medical Services. On returning to New South Wales, he set himself the task of organizing an efficient medical service in the Colony of New South Wales. In 1886, when he started on this task, the forces in the Colony possessed one stretcher and one squad of stretcher-bearers. His immense enthusiasm for military efficiency and his recognition of the importance of a well-organized medical service in connexion with the Army attracted to him a handful of capable and energetic medical practitioners, who were fired by Williams' enthusiasm. In a short time he established the beginning of the organization which proved of such great value four years later.

In 1899 the war clouds burst in South Africa. General French was in charge of the New South Wales contingent, which was destined to play an important part in the campaign. The General recognized the value of William Daniel Campbell Williams' services and appointed him to take charge of the Army Medical Corps attached to the Contingent. Departmental difficulties, however, arose. In the end it arranged that he should accompany the first contingent as Officer Commanding the Army Medical Corps on the transport only. The fact that the existing organization was entirely due to his energy, enthusiasm and foresight forced itself to the recognition by those in command and the full charge of the New South Wales Army Medical Corps was given him in South Africa a short time after his arrival. At first the Corps accompanied the Contingent to Horn's River, where a camp was pitched. At the end of six weeks Williams had to return to Capetown to meet the Second Contingent on its arrival. His preparations were very complete. With the First Contingent he had established a half bearer company with five ambulance waggons and every detail enabling the unit to act on its own resources. Half a field hospital with 50 beds was also established. The bearer company and the field hospital were completed from the Second Contingent. In April of 1900 Williams was promoted to the office of Principal Medical

Officer of the Australian Force and, shortly after, as Principal Medical Officer of Ian Hamilton's Division. At a later date he filled the same position in General Hunter's force. The medical service in the South African campaign laboured under several grave disadvantages. The units were small and, as far as the Royal Army Medical Corps was concerned, had no independent means of transport. The Australian units, however, overcame this difficulty because Williams recognized the great advantage which must accrue if they possessed their own ambulance waggons and mobile field hospitals. The units were never stationary. The longest periods spent at any one place were six weeks on the Orange River and six weeks in Bloemfontein. Consequently, there was no opportunity for the development of field sanitation and but little chance of providing the forces with a healthy water supply. The destructive effect of enteric fever on the British troops during the campaign was undoubtedly due to some extent to this fact. At first a base hospital for Australian troops was stationed at Capetown, while later Williams established two at Bloemfontein and one at Kroonstad. It is common knowledge that the Australian Army Medical Corps did invaluable service in the field throughout the whole of the year 1900 and later. After Paardeberg Lord Roberts visited the unit and congratulated Major Williams on his splendidly organized service and on the valuable work which had been performed under his command. He caused a cable to be dispatched to the New South Wales Government, thanking them for having provided the Corps under the charge of Williams. About the same time the officers of the Royal Army Medical Corps acknowledged openly that the Australian and New Zealand Army Medical Corps (William Daniel Campbell Williams was Principal Medical Officer of the combined Corps) was much better organized than their own. As the campaign proceeded, a further base hospital was established at Pretoria and the methods of evacuation were considerably improved. It is difficult in a short account to convey an adequate impression of the great achievements in the organization of the Army Medical Service and in its direction by its Principal Medical Officer. In January, 1901, he received official recognition by promotion to the rank of Surgeon-General. On his return to New South Wales in the same month, he was created a Commander of the Bath and a Knight of Grace of the Order of St. John of Jerusalem.

On his return to civil practice he resumed his work at St. Vincent's Hospital, Sydney, and, in 1902, when he was appointed Director-General Medical Services for the Commonwealth and was consequently required to move to Melbourne, he was appointed Consultant Surgeon to St. Vincent's Hospital.

The lessons gained during the South African War gave a fresh impetus to his inexhaustible energy. During the first few years of his activities at headquarters he sought to modify the organization of his service and to extend it in various directions, in order that the defects which were obvious to him, might be removed in the future eventuality of war. Unfortunately, he had but a limited recruiting field and his material during the early years of the present century was insufficient for his needs, although it was excellent in quality. In 1914, when war broke out, he accompanied the First Contingent of the Australian Imperial Force to Egypt. His health had been indifferent for some years and the sturdy, energetic, tireless champion of South Africa found that he was losing his punch. Little by little, the great responsibility and the immense work of the direction of the Australian Army Medical Corps fell from his on to others' shoulders. For a time he conducted administrative work in London in an office in Victoria Street and later he again returned to Egypt. The authorities recognized the necessity of entrusting the medical work to a younger man, but, at the same time, were unwilling to pass William Daniel Campbell Williams by. For some reason which we do not pretend to understand, he left Australia with the first contingent with the rank of Major. Later his rank of General was restored to him by the Imperial authorities, and, still later, His Majesty the King created him a Knight Commander of the Order of St. Michael and St. George, in recognition of his magnificent services. It would have been better, perhaps, had his rank during his period of service in Egypt and Gallipoli been that of Major instead of that of General. Soldiers, after all, are human beings and an exalted rank is at times a detriment.

In the year 1881 he married the daughter of the late Henry A. Severn. There is one son, who is at present serving with the Indian Army, and one daughter. Lady Williams and her daughter remained in London when he returned to Australia after relinquishing his position in the Australian Imperial Force. They must feel solace in the knowledge that the medical profession in Australia recognizes that it was he who conceived and brought into being the organization which has acquitted itself magnificently both in South Africa and in the great world war.

Naval and Military.

CASUALTIES.

The 465th list of casualties was issued to the public on May 26, 1919. It was a small list. Among those officially reported to have died of "other causes" is Captain Clarence Cecil Hains. The announcement of the death of Captain Hains as the result of an accidental explosion, was published in *The Medical Journal of Australia* of May 17, 1919, page 407.

APPOINTMENTS.

The following appointments, etc., have been announced in the *Commonwealth of Australia Gazette*, No. 56, of May 8, 1919, and No. 57, of May 15, 1919:—

Australian Imperial Force.

First Military District.

Major (Temporary Lieutenant-Colonel) F. C. Wooster, Australian Army Medical Corps, to be Lieutenant-Colonel. Dated 11th November, 1918.

Lieutenant-Colonel (Temporary Colonel) D. G. Croll, Australian Army Medical Corps, to be Colonel. Dated 26th April, 1918.

Lieutenant-Colonel (Temporary Colonel) A. H. Marks, D.S.O., Australian Army Medical Corps, to be Colonel. Dated 11th November, 1918.

Second Military District.

Major (Temporary Lieutenant-Colonel) B. C. Kennedy, Australian Army Medical Corps, to be Lieutenant-Colonel. Dated 11th November, 1918.

Major (Temporary Lieutenant-Colonel) R. W. W. Walsh, D.S.O., Australian Army Medical Corps, to be Lieutenant-Colonel. Dated 11th November, 1918.

Major K. H. Grieve, M.C. Dated 1st June, 1919.

Major S. M. O'Riordan. Dated 15th May, 1919.

Captain (Temporary Major) G. Bell, 1st Australian C.C.S., is transferred to No. 1 A.A.H., for duty as Surgical Specialist, and to retain the temporary rank of Major whilst so employed. Dated 7th January, 1919.

Captain C. Cosgrove, M.C., Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain E. N. B. Docker, M.C., Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain A. H. Joyce, Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain A. M. Langan, Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Lieutenant-Colonel (Temporary Colonel) F. A. Maguire, D.S.O., Australian Army Medical Corps, to be Colonel. Dated 11th November, 1918.

Captain K. S. Parker, M.C., Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain C. F. Robinson, M.C., Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain F. P. M. Solling, M.C., Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain S. R. Stafford, Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain H. L. Tooth, Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain E. B. M. Vance, Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain R. Van Someren, Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain P. E. Voss, M.C., Australian Army Medical Corps, to be Major. Dated 11th November, 1918.

Captain H. G. Howell. Dated 23rd April, 1919.
Captain C. R. Alexander. Dated 16th April, 1919.

Third Military District.

Lieutenant-Colonel J. Gordon, C.M.G.. Dated 22nd March, 1919.
Major F. T. Beamish. Dated 16th May, 1919.
Major (Temporary Lieutenant-Colonel) E. W. Gutteridge, Australian Army Medical Corps, to be Lieutenant-Colonel. Dated 11th November, 1918.
Major (Temporary Lieutenant-Colonel) H. B. Lewers, O.B.E., Australian Army Medical Corps, to be Lieutenant-Colonel. Dated 11th November, 1918.

(To be Continued.)

Medical Appointments.

The appoointment of Dr. E. W. Fairfax (B.M.A.) in place of the late Sir James Fairfax, as a Government Representative on the Board of Directors of the Royal Prince Alfred Hospital, Sydney, has been approved.

It is announced that Dr. Donald McRae (B.M.A.) has declined to accept the position of Government Medical Officer at Tingha, New South Wales.

In pursuance of the provisions of the *Workers' Compensation Act, 1915,* Dr. H. D. Downing (B.M.A.) has been appointed Medical Referee at Ivanhoe, Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

University of Melbourne: Assistant Professor in Anatomy; Assistant Professor in Physiology and Lecturer in Bio-Chemistry.
Queen's Memorial Infective Diseases Hospital, Fairfield, Victoria, Junior Resident Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec. 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta, Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

June 3.—Tas Branch, B.M.A., Branch and Council.
June 4.—Vic. Branch, B.M.A.
June 6.—Q. Branch, B.M.A.
June 10.—N.S.W. Branch, B.M.A., Ethics Committee.
June 12.—Vic. Branch, B.M.A., Council.
June 13.—N.S.W. Branch, B.M.A., Clinical.
June 13.—Q. Branch, B.M.A., Council.
June 13.—S. Aust. Branch, B.M.A., Council.
June 17.—Tas. Branch, B.M.A., Council.
June 17.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
June 18.—W. Aust. Branch, B.M.A., Branch and Council.
June 24.—N.S.W. Branch, B.H.A., Medical Politics Committee; Organization and Science Committee.
June 25.—Vic. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia,* B.M.A. Building, 30-34 Elizabeth Street, Sydney.

The Secretary of the Victorian Branch is endeavouring to secure copies of the issues of the *British Medical Journal* of the following dates, to complete a file for one of the members. We shall be grateful to any of our readers who has a spare copy of any of the numbers sought, if he will offer them to the Secretary of the Branch:—

1915: April 3 and 10; July 10, 17, 24, 31; August 7 and 21.
1916: July 8, August 5 and 12, November 18.
1918: Title Page and Index, Volume I. and Volume II..